



IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re PATENT APPLICATION of:
PYOTSIA ET AL.

Confirmation Number: 9122

Application No.: 09/550,311

Group Art Unit: 2121

Filed: April 14, 2000

Examiner: C. BARNES

Title: A WIRELESS CONTROL OF A FIELD DEVICE IN AN INDUSTRIAL PROCESS

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BRIEF ON APPEAL

PILLSBURY WINTHROP LLP
P.O. Box 10500
McLean, Virginia 22102
Telephone: (703) 905-2000
Attorneys for Appellants

Date: May 4, 2004

05/05/2004 CCHAU1 00000094 033975 09550311
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I. INTRODUCTION

This Appeal is from an Office Action mailed October 27, 2003, finally rejecting claims 2-4, 6-8, 11, 14, and 15 of the above-identified application.

A. Real Party in Interest

The real party in interest for this Appeal and the present application is Neles Field Controls Oy, by way of an Assignment recorded in the U.S. Patent and Trademark Office at Reel 010730, Frame 0402-03.

B. Statement of Related Appeals and Interferences

There are presently no appeals or interferences known to Appellants, Appellants' representatives, or the Assignee, which will directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal.

C. Status of Claims

Claims 2-4 and 6-15 are pending; claims 1 and 5 have been canceled without prejudice or disclaimer. Claims 2-4, 6-8, 11, 14, and 15 stand rejected, and are on appeal. Claims 9, 10, 12, and 13 are objected to.¹ The claims on appeal are set forth in the attached Appendix. Claims 2, 4, 11, and 15 are independent. Claim 3 depends from claim 2; claims 6, 7, and 13 depend from claim 11; claims 8, 9, and 14 depend from claim 15; and claims 10 and 12 depend from claim 9.

D. Status of Amendments

An Amendment was filed in the U.S. Patent and Trademark Office on April 14, 2000 preliminarily amending claims to remove multiple dependencies. An Amendment was filed in the U.S. Patent and Trademark Office on July 23, 2003 in response to a March 26, 2003 Office Action. All claim amendments have been entered and are of record.

¹ The Examiner indicated that claims 9, 10, 12, and 13 would be allowable if rewritten in independent form including all the limitations of any base and intervening claims. Appellants delayed rewriting those claims to afford the Office with the opportunity to fully reconsider the patentability of the rejected base claims.

II. SUMMARY OF THE INVENTION

A. Features of the Invention

This invention relates to wireless configuration, management, and control of field devices. In various embodiments, a mobile terminal communicates with a control system that is connected to field devices. By communicating with the control system, the mobile terminal can selectively remotely control, configure, or monitor the field devices. An interactive user interface is associated with the control system and utilizes database data of the control system. Accordingly, content of the user interface can be up-to-date relative to the control system and related processes. In some embodiments, the interface is provided by a World Wide Web (WWW) server associated with the control system.

B. The Claims on Appeal

Claim 2

Independent claim 2 recites a control system that includes (1) at least one mobile terminal that communicates with the control system and (2) an interactive user interface associated with the control system. Via the communication, field devices can be selectively remotely controlled, configured, or monitored. The user interface utilizes configuration, control, and management data maintained in at least one database of the control system. The content of the user interface can be modified based on database data from the control system. (Specification at page 4, lines 1-11; page 7, lines 4-31; page 8, line 9 to page 9, line 2; page 10, line 13 to page 11, line 19; FIGS. 2 and 3.)

Claim 3

Claim 3 depends from claim 2, reciting that the control system controls or configures the field devices according to the commands from the interactive user interface. (Specification at page 5, lines 2-9.)

Claim 4

Independent claim 4 recites a control system that includes (1) at least one mobile terminal that communicates with the control system and (2) an interactive user interface associated with the control system. Via the communication, field devices can be selectively remotely controlled, configured, or monitored. The user interface utilizes configuration,

control, and management data maintained in at least one database of the control system. An identity of a field device is a tag number of the device. (Specification at page 4, lines 1-11; page 7, lines 4-31; page 8, line 9 to page 9, line 2; page 10, line 13 to page 11, line 19; page 12, lines 10-16; FIGS. 2 and 3.)

Claim 11

Independent claim 11 recites a control system that includes (1) at least one mobile terminal that communicates with the control system and (2) a WWW server associated with the control system. Via the communication, field devices can be selectively remotely controlled, configured, or monitored. The WWW server utilizes configuration, control, and management data maintained in at least one database of the control system, and thus provides an interactive web page that is accessible through a data connection between the mobile terminal and an access server. A browser in the mobile terminal interacts with the interactive web page through the data connection, and the WWW server includes a search function that, in response to an identity of a field device sent from the mobile terminal, searches the WWW page of the respective field device. (Specification at page 4, lines 1-11; page 7, lines 4-31; page 8, line 9 to page 9, line 2; page 10, line 13 to page 11, line 19; page 12, lines 12-27; page 6, lines 8-14; FIGS. 2, 3, 5A and 5B.)

Claim 6

Claim 6 depends from claim 11, reciting that the WWW server is configured to modify content of the interactive WWW pages based on database data from the control system. (Specification at page 10, line 13 to page 11, line 19.)

Claim 7

Claim 7 depends from claim 11, reciting that a Wireless Application Protocol (WAP) is used between the access server and the mobile terminal, and that a WWW protocol is used between the access server and the WWW server. (Specification at page 9, line 19 to page 10, line 12; FIG. 3.)

Claim 15

Independent claim 15 recites a control system that includes (1) at least one mobile terminal that communicates with the control system and (2) a WWW server associated with the control system. Via the communication, field devices can be selectively remotely controlled, configured, or monitored. The WWW server utilizes configuration, control, and management data maintained in at least one database of the control system, and thus provides an interactive web page that is accessible through a data connection between the mobile terminal and an access server. A browser in the mobile terminal interacts with the interactive web page through the data connection, and the WWW server is configured to modify content of the interactive WWW pages based on database data from the control system. (Specification at page 5, lines 10-30; page 7, lines 4-31; page 8, line 9 to page 9, line 2; page 10, line 13 to page 11, line 19; FIGS. 2 and 3.)

Claim 8

Claim 8 depends from claim 15, reciting that a WAP is used between the access server and the mobile terminal, and that a WWW protocol is used between the access server and the WWW server. (Specification at page 9, line 19 to page 10, line 12; FIG. 3.)

Claim 14

Claim 14 depends from claim 15, reciting that the identity of the field device is a tag number of the field device. (Specification at page 12, lines 10-16.)

III. ISSUES AND REJECTIONS

In the October 27, 2003 Final Office Action, claims 2, 3, and 15 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Tapperson et al. (U.S. Patent No. 5,793,963; hereafter “Tapperson”) in view of Venkatraman et al. (U.S. Patent No. 6,139,177; hereafter “Venkatraman ‘177”). Claims 6 and 11 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Tapperson, Venkatraman ‘177, and Maddalozzo et al. (U.S. Patent No. 6,460,060; hereafter “Maddalozzo”). Claims 4, 14, and 15 were rejected under 35 U.S.C. § 103 over Tapperson in view of Venkatraman (U.S. Patent No. 5,956,487; hereafter “Venkatraman ‘487”). Claim 8 was rejected under 35 U.S.C. § 103(a) as being unpatentable over Tapperson, Venkatraman ‘487, and Smethers (U.S. Patent No. 6,560,640; hereafter “Smethers”). Claim 11 was rejected under 35 U.S.C. § 103(a) as being unpatentable over

Tapperson, Venkatraman '487, and Maddalozzo. Claim 7 was rejected under 35 U.S.C. § 103(a) as being unpatentable over Tapperson, Venkatraman '487, Maddalozzo, and Smethers.

Thus, the issues on appeal are:

- 1) Whether claims 2, 3, and 15 are obvious under 35 U.S.C. § 103(a) over Tapperson in view of Venkatraman '177;
- 2) Whether claims 6 and 11 are obvious under 35 U.S.C. § 103(a) over Tapperson, Venkatraman '177, and Maddalozzo;
- 3) Whether claims 4, 14, and 15 are obvious under 35 U.S.C. § 103 over Tapperson in view of Venkatraman '487;
- 4) Whether claim 8 is obvious under 35 U.S.C. § 103(a) over Tapperson, Venkatraman '487, and Smethers;
- 5) Whether claim 11 is obvious under 35 U.S.C. § 103(a) over Tapperson, Venkatraman '487, and Maddalozzo; and
- 6) Whether claim 7 is obvious under 35 U.S.C. § 103(a) over Tapperson, Venkatraman '487, Maddalozzo, and Smethers.

IV. GROUPING OF CLAIMS

Each claim of this patent application is separately patentable and upon issuance of a patent will be entitled to a separate presumption of validity under 35 U.S.C. § 282. For convenience in handling of this Appeal, the claims are grouped as follows:

- Group I, claims 2 and 3;
- Group II, claim 4;
- Group III, claims 14 and 15;
- Group IV, claim 8;
- Group V, claims 6 and 11; and
- Group VI, claim 7.

Each of Groups I through VI will be argued separately herein. The groups do not stand or fall together.

V. ARGUMENT

A. The Law Regarding Factual Inquiries to Determine

Obviousness/Nonobviousness Under 35 U.S.C. § 103(a)

Several basic factual inquiries must be made to determine obviousness or non-obviousness of patent application claims under 35 U.S.C. § 103. These factual inquiries are set forth in Graham v. John Deere Co., 383 US 1, 17, 148 USPQ 459, 467 (1966):

Under § 103, the scope and content of the prior art are to be determined; differences between the prior art and the claims at issue are to be ascertained; and the level of ordinary skill in the pertinent art resolved. Against this background, the obviousness or non-obviousness of the subject matter is determined.

As stated by the Federal Court in In re Ochiai, 37 USPQ2d 1127, 1131 (Fed. Cir. 1995):

[T]he test of obviousness vel non is statutory. It requires that one compare the claim's subject matter as a whole with the prior art to which the subject matter pertains. 35 U.S.C. § 103.

The inquiry is thus highly fact-specific by design.... When the references cited by the Examiner fail to establish a prima facie case of obviousness, the rejection is improper and will be overturned. In re Fine, 837 F.2d 1071, 1074, 5 USPQ2d 1596, 1598 (Fed. Cir. 1988) (emphasis added).

In rejecting claims under 35 U.S.C. § 103(a), an Examiner bears an initial burden of presenting a prima facie case of obviousness. A prima facie case of obviousness is established only if there is a suggestion or motivation to combine reference teachings; a reasonable expectation of success; and the prior art references, when combined, teach or suggest all the claim limitations. If an Examiner fails to establish a prima facie case, a rejection is improper and will be overturned. See In re Rijckaert, 9 F.3d 1531, 28 USPQ2d 1955 (Fed. Cir. 1993). "If examination ... does not produce a prima facie case of unpatentability, then without more, the Applicant is entitled to the grant of the patent." In re Oetiker, 977 F.2d 1443, 1445-46, 24 USPQ2d 1443, 1444 (Fed. Cir. 1992).

B. Rejections Under 35 U.S.C. § 103(a)

1. The Cited References

a) Tapperson (U.S. Patent No. 5,793,963)

Tapperson merely discloses an arrangement for providing non-redundant secondary access to field devices in a distributed control system. Each field device primarily controlled by a control room is associated with a wireless fieldbus port that is accessible by a wireless handheld unit or wireless terminal. As such, non-redundant secondary access of the field device is achieved. In particular, the wireless handheld control unit communicates with a field device directly via either (1) a wireless port provided in the specific field device to be controlled or (2) via an access port connected to a fieldbus such that all field devices connected to the fieldbus can be accessed remotely. (Abstract.) The handheld control unit is programmed to access each field device so that a maintenance person can access all the actions of devices supplied by different manufacturers. (See, e.g., col. 7, lines 51-55 and col. 8, lines 61-64.)

b) Venkatraman '177 (U.S. Patent No. 6,139,177)

Venkatraman '177 merely discloses a device 10 to be controlled that is itself provided with an embedded web access functionality for device access and control. (See FIG. 1.) This embedded web access functionality may be a web software program implemented with existing circuitry in a device, such as an existing processor, memory, and input/output circuit that normally perform device-specific functions. (Col. 1, line 62 to col. 2, line 26.) A general-purpose web browser 40 external to the device 10 may be used to access the web access functionality of the device 10. (Col. 4, line 62 to col. 5, line 15.) The device 10 may be, for example, a compact web server. (Col. 10, line 63 to col. 11, line 4.)

c) Maddalozzo (U.S. Patent No. 6,460,060)

Maddalozzo merely discloses a web browser that automatically generates a search list from URLs in the browser's bookmark and/or history files, automatically accesses and searches each URL on the Internet or in a cache on the browser's computer, and displays web pages containing the target keywords in a format selected by the user on the data processing system display. (Abstract; FIG. 3A.)

d) Venkatraman '487 (U.S. Patent No. 5,956,487)

Venkatraman '487 merely discloses embedding web access functionality into a device 10 including a web server that provides a device web page. The device includes an embedded network interface that enables access to the device web page by a web browser 40. A user of the web browser accesses the user interface functions for the device through the device web page. The web server functionality may be implemented with existing circuitry in a device, such as an existing processor, memory, and input/output circuitry that normally perform device-specific functions, thereby avoiding the extra cost and space required for dedicated web server hardware for the device. (Col. 2, lines 15-26.)

e) Smethers (U.S. Patent No. 6,560,640)

Smethers merely discloses techniques that enable wireless devices to implement bookmarks with improved transmission efficiency, reduced user navigation, and/or reduced amounts of memory resources. A compact request from a wireless device to an intermediate server is used when requesting a document or file by selection of a bookmark. A user can select a bookmark to request the associated document or file with reduced user interaction (e.g., a single button action). Memory resources of the wireless devices need not be consumed to store network addresses (e.g., URLs) for the bookmarks. (Col. 5, lines 15-27.)

2. Claims 2 and 3 Are Not Obvious Over Tapperson in View of Venkatraman '177

a) Tapperson and Venkatraman '177 do not teach or suggest a mobile terminal arranged to communicate with a control system

Independent claim 2 recites a control system in which “at least one mobile terminal [is] arranged to communicate with the control system over a cellular communication system in order to selectively remotely control, configure or monitor the field devices.”

Contrary to the Examiner’s assertions, Tapperson does not teach or suggest such a feature. Instead, Tapperson explicitly teaches wireless fieldbus communication between the handheld unit and the field devices connected to a fieldbus “without having to communicate with the control room and independent of the distributed control system.” (See, e.g., col. 6, lines 46-52; emphasis added.) Tapperson further emphasizes that its handheld unit does not communicate with the control room, but instead communicates directly with the field devices:

The wireless Fieldbus connections described herein are implemented by secondary wireless network ports that are used in addition to primary network ports that are hardwired to a control room. Accordingly, a network-based field device may alternately be accessed via either the hardwired connection to the control room or the wireless Fieldbus connection.

(Col. 6, lines 53-59.) Moreover, “the control room 128 cannot access any of the secondary functions provided by the Fieldbus field devices. To access these functions, bridge/converter 136 is provided with an active hard-wired Fieldbus port 166 and wireless Fieldbus port 168” by which the handheld unit directly communicates with the field devices. (FIG. 3; col. 8, lines 19-23.) Thus, by teaching that its handheld unit and control room are independent, Tapperson in fact teaches away from the claimed invention.

b) Tapperson and Venkatraman ‘177 do not teach or suggest an interactive user interface associated with a control system

Independent claim 2 also recites:

an interactive user interface associated with the control system, said user interface utilizing configuration, control and management data maintained in at least one database of the control system and being accessible by the mobile terminal through a dedicated data connection established over the cellular communication system, in order to selectively control, configure or monitor the field devices connected to the control system,

said interactive user interface being configured to modify content of the interactive user interface in response to requests or selections made by the mobile terminal and based on the configuration, control and management data retrieved from said at least one database of the control system, and to create control or configuration commands to the control system in response to selections or inputs made by the mobile terminal user in the interactive user interface.

(Emphasis added.)

In the Final Action, the Examiner admitted that Tapperson fails to teach or suggest such an interactive user interface. Indeed, any interface provided for the handheld unit of Tapperson is in no way associated with a control system because, as noted above, the wireless connection in Tapperson is directly to the field device, independent of the control system. Tapperson further teaches that the handheld control unit is programmed to wirelessly access

each field device independent of the control system. (Col. 7, lines 52-55.) As such, any interface in the handheld unit of Tapperson is not associated with the control system.

To remedy this deficiency in Tapperson, the Office Action referred to Venkatraman '177. However, Venkatraman '177 in no way teaches "an interactive user interface associated with the control system..." as recited in claim 2. Instead, as described above, Venkatraman '177 merely teaches that the device to be controlled is itself provided with an embedded web access functionality. A general-purpose web browser in an external device accesses the embedded functionality in the device to be controlled.

Therefore, Venkatraman '177 teaches away from the invention claimed in claim 2, wherein the interactive user interface is associated with the control system and arranged to utilize the configuration, control, and management data of the control system.

Venkatraman '177 further fails to teach an interactive user interface that is configured to modify the content of the interactive user interface in response to the requests and selections made by the mobile terminal and based on the configuration, control and management data obtained from the control system, and to create control and configuration commands to the control system in response to the selections or inputs made by the mobile terminal user in the interactive user interface.

To the contrary, as discussed above, Venkatraman '177 teaches that each device is provided with embedded web modules embodying a device-specific user interface that can be accessed by a web browser. Thus, the system of Venkatraman '177 includes a plurality of user interfaces, with each device having its own user interface. Such an approach differs from embodiments of the present invention, wherein a centralized user interface is provided on a system level (at the control system), with the user interface providing access to a plurality of field devices and adapting to the different features of those field devices.

As the combined teachings of Tapperson and Venkatraman '177 do not teach or suggest all the features of claim 2, the Examiner has failed to present a prima facie case of obviousness against claim 2, and the rejection must be withdrawn.

c) Claim 3

Claim 3 depends from claim 2. For at least the above-stated reasons, the rejection of claim 3 must be withdrawn. Moreover, claim 3 recites that "said control system controls or configures the field devices according to the commands from the interactive user interface."

Neither Tapperson nor Venkatraman '177 discloses this feature. As described above, in Tapperson, the control system and handheld control unit are independent. In Venkatraman '177, the user interface resides in each device to be controlled and does not interact with any control system.

3. Claim 4 Is Not Obvious Over Tapperson in View of Venkatraman '487

a) Tapperson and Venkatraman '487 do not teach or suggest a mobile terminal arranged to communicate with a control system

Independent claim 4 recites a control system in which “at least one mobile terminal [is] arranged to communicate with the control system over a cellular communication system in order to selectively remotely control, configure or monitor the field devices.” As discussed above in relation to claim 2, Tapperson does not teach or suggest such a feature.

b) Tapperson and Venkatraman '487 do not teach or suggest an interactive user interface associated with a control system, wherein the identity of the field device is a tag number of the field device

Independent claim 4 also recites:

an interactive user interface associated with the control system, said user interface utilizing configuration, control and management data maintained in at least one database of the control system and being accessible by the mobile terminal through a dedicated data connection established over the cellular communication system, in order to selectively control, configure or monitor the field devices connected to the control system, wherein the identity of the field device is a tag number of the field device.

(Emphasis added.)

In the Final Action, the Examiner admitted that Tapperson fails to teach or suggest such an interactive user interface. Indeed, any interface provided for the handheld unit of Tapperson is in no way associated with a control system because, as noted above, the wireless connection in Tapperson is directly to the field device, independent of the control system. Tapperson further teaches that the handheld control unit is programmed to wirelessly access each field device independent of the control system. (Col. 7, lines 52-55.) As such, any interface in the handheld unit is not associated with the control system. Moreover, there is no

teaching or suggestion whatsoever in Tapperson that the identity of the field device is a tag number of that device.

To remedy this deficiency in Tapperson, the Office Action referred to Venkatraman '487. However, Venkatraman '487 in no way teaches "an interactive user interface associated with the control system..." as recited in claim 4. Instead, as described above, Venkatraman '487 merely teaches that the device to be controlled is itself provided with an embedded web access functionality (i.e., a web server). A general-purpose web browser in an external device accesses the embedded functionality in the device to be controlled.

Therefore, Venkatraman '487 teaches away from the invention claimed in claim 4, wherein the interactive user interface is associated with the control system and arranged to utilize the configuration, control, and management data of the control system.

Venkatraman '487 further fails to teach an interactive user interface that is configured to modify the content of the interactive user interface in response to the requests and selections made by the mobile terminal and based on the configuration, control and management data obtained from the control system, and to create control and configuration commands to the control system in response to the selections or inputs made by the mobile terminal user in the interactive user interface.

To the contrary, as discussed above, Venkatraman '487 teaches that each device is provided with a web server embodying a device-specific user interface that can be accessed by a web browser. Thus, the system of Venkatraman '487 includes a plurality of user interfaces, with each device having its own user interface. Such an approach differs from embodiments of the present invention, wherein a centralized user interface is provided on a system level (at the control system), with the user interface providing access to a plurality of field devices and adapting to the different features of those field devices.

Venkatraman '487 in no way teaches that the identity of the field device is a tag number of that device. In the Final Action, the Examiner concluded that "[o]ne of ordinary skill in the art would have been motivated to include the functionality of the web browser into the handheld unit to illustrate a method of accessing/controlling devices remotely over a network by identifying devices with URLs that may include tag numbers of field devices as identification." (Page 13; emphasis added.) However, the Examiner did not provide any support for that conclusion in Venkatraman '487 or in any other reference.

As the combined teachings of Tapperson and Venkatraman '487 do not teach or suggest all the features of claim 4, the Examiner has failed to present a prima facie case of obviousness against claim 4, and the rejection must be withdrawn.

4. Claim 15 Is Not Obvious Over Tapperson in View of Venkatraman '177; and Claims 14 and 15 Are Not Obvious Over Tapperson in View of Venkatraman '487

a) Claim 15

Like claim 2 discussed above, claim 15 recites “at least one mobile terminal arranged to communicate with the control system over a cellular communication system in order to selectively remotely control, configure or monitor the field devices.” In addition, the WWW server of claim 15 corresponds in relevant respects to the interactive user interface recited in claim 2 and not taught or suggested by Tapperson or Venkatraman '177. Accordingly, for at least the above-stated reasons, the Examiner's rejection of claim 15 under 35 U.S.C. § 103(a) must be withdrawn.

Like claim 4 discussed above, independent claim 15 recites “at least one mobile terminal arranged to communicate with the control system over a cellular communication system in order to selectively remotely control, configure or monitor the field devices.” In addition, the WWW server of claim 15 corresponds in relevant respects to the interactive user interface recited in claim 4 and not taught or suggested by Tapperson or Venkatraman '487. Accordingly, for at least the above-stated reasons, the Examiner's rejection of claim 15 under 35 U.S.C. § 103(a) must be withdrawn.

b) Claim 14

Claim 14 depends from claim 15. For at least the above-stated reasons, the rejection of claim 14 must be withdrawn. Moreover, claim 14 recites that “the identity of the field device is a tag number of the field device.” As described above, neither Tapperson nor Venkatraman '487 discloses this feature.

5. Claim 8 Is Not Obvious Over Tapperson, Venkatraman '487, and Smethers

Claim 8 depends from claim 15. Like Tapperson and Venkatraman '487, Smethers does not disclose "at least one mobile terminal arranged to communicate with the control system over a cellular communication system in order to selectively remotely control, configure or monitor the field devices." Nor does Smethers disclose a WWW server as recited. Instead, Smethers merely teaches techniques that enable wireless devices to implement bookmarks with improved transmission efficiency, reduced user navigation, and/or reduced amounts of memory resources.

For at least the above-stated reasons, the rejection of claim 8 must be withdrawn.

6. Claims 6 and 11 Are Not Obvious Over Tapperson, Venkatraman '177, and Maddalozzo; and Claim 11 Is Not Obvious Over Tapperson, Venkatraman '487, and Maddalozzo

a) Tapperson, Venkatraman '177, and Maddalozzo do not teach or suggest (1) a mobile terminal arranged to communicate with a control system, or (2) a WWW server associated with the control system

Independent claim 11 recites "at least one mobile terminal arranged to communicate with the control system over a cellular communication system in order to selectively remotely control, configure or monitor the field devices." As discussed above in relation to claim 2, neither Tapperson nor Venkatraman '177 teaches or suggests such a feature.

Claim 11 also recites:

a World Wide Web (WWW) server associated with the control system,

said WWW server utilizing configuration, control and management data maintained in at least one database of the control system for providing at least one interactive WWW page which is accessible through a TCP/IP network and a data connection between the mobile terminal and an access server connected to the TCP/IP network

The WWW server of claim 11 corresponds in relevant respects to the interactive user interface of claim 2. Neither Tapperson nor Venkatraman '177 teaches a WWW server as recited. As described above in relation to claim 2, in Tapperson, any interface provided for the wireless handheld unit is entirely independent of the control system. Further,

Venkatraman '177 teaches that each device is provided with web modules embodying a device-specific user interface that can be accessed by a web browser. There is no web server that uses data in a database of a control system.

In the Final Action, the Examiner conceded that neither Tapperson nor Venkatraman '177 discloses "a search function which, in response to an identity of a field device sent from the mobile terminal, searches the WWW page of the respective field device," as recited in claim 11.

The Examiner asserted that Maddalozzo remedies the deficiencies of Tapperson and Venkatraman '177. Contrary to the Examiner's assertion, however, Maddalozzo merely teaches a web browser that automatically generates a search list from URLs in the browser's bookmark and/or history files, automatically accesses and searches each URL on the Internet or cache on the browser's computer, and displays web pages containing the target keywords in a format selected by the user.

There is no teaching or suggestion whatsoever that the web browser (or any other structure) in Maddalozzo provides a search function that in any way receives "an identity of a field device sent from the mobile terminal," and in response, "searches the WWW page of the respective field device." Instead, Maddalozzo teaches a very specific implementation of a search function that is not pertinent to a control system as recited in claim 11.

As the combined teachings of Tapperson, Venkatraman '177, and Maddalozzo do not teach or suggest all the features of claim 11, the Examiner has failed to present a prima facie case of obviousness against claim 11, and the rejection must be withdrawn.

b) Tapperson, Venkatraman '487, and Maddalozzo do not teach or suggest (1) a mobile terminal arranged to communicate with a control system, or (2) a WWW server associated with the control system

Independent claim 11 recites "at least one mobile terminal arranged to communicate with the control system over a cellular communication system in order to selectively remotely control, configure or monitor the field devices." As discussed above in relation to claims 2 and 4, neither Tapperson nor Venkatraman '487 teaches or suggests such a feature.

Claim 11 also recites:

a World Wide Web (WWW) server associated with the control system,

said WWW server utilizing configuration, control and management data maintained in at least one database of the control system for providing at least one interactive WWW page which is accessible through a TCP/IP network and a data connection between the mobile terminal and an access server connected to the TCP/IP network

The WWW server of claim 11 corresponds to the interactive user interface of claim 4. Neither Tapperson nor Venkatraman '487 teaches a WWW server as recited. As described above in relation to claims 2 and 4, in Tapperson, any interface provided for the wireless handheld unit is entirely independent of the control system. Further, Venkatraman '487 teaches that each device is provided with a web server embodying a device-specific user interface that can be accessed by a web browser. There is no web server that uses data in a database of a control system.

In the Final Action, the Examiner conceded that neither Tapperson nor Venkatraman '487 discloses "a search function which, in response to an identity of a field device sent from the mobile terminal, searches the WWW page of the respective field device," as recited in claim 11.

The Examiner asserted that Maddalozzo remedies the deficiencies of Tapperson and Venkatraman '487. Contrary to the Examiner's assertion, however, Maddalozzo merely teaches a web browser that automatically generates a search list from URLs in the browser's bookmark and/or history files, automatically accesses and searches each URL on the Internet or cache on the browser's computer, and displays web pages containing the target keywords in a format selected by the user.

There is no teaching or suggestion whatsoever that the web browser (or any other structure) in Maddalozzo provides a search function that in any way receives "an identity of a field device sent from the mobile terminal," and in response, "searches the WWW page of the respective field device." Instead, Maddalozzo teaches a very specific implementation of a search function that is not pertinent to a control system as recited in claim 11.

As the combined teachings of Tapperson, Venkatraman '487, and Maddalozzo do not teach or suggest all the features of claim 11, the Examiner has failed to present a prima facie case of obviousness against claim 11, and the rejection must be withdrawn.

c) Claim 6

Claim 6 depends from claim 11. For at least the above-stated reasons, the rejection of claim 6 must be withdrawn. Moreover, claim 6 recites that “said WWW server is configured to modify the content of the interactive WWW pages in response to requests or selections made by the mobile terminal and based on the configuration, control and management data of said at least one database of the control system, and to create control or configuration commands to the control system in response to selections or inputs made by the mobile terminal user in the interactive WWW pages.” Neither Tapperson, Venkatraman ‘177, nor Maddalozzo discloses this feature. As described above, in Tapperson, the control system and handheld control unit are independent. In Venkatraman ‘177, the user interface resides in each device to be controlled and does not interact with any control system. Maddalozzo provides a WWW search function entirely unrelated to a control system.

7. Claim 7 Is Not Obvious Over Tapperson, Venkatraman ‘487, Maddalozzo, and Smethers

Claim 7 depends from claim 11. Like Tapperson, Venkatraman ‘487, and Maddalozzo, Smethers does not disclose “at least one mobile terminal arranged to communicate with the control system over a cellular communication system in order to selectively remotely control, configure or monitor the field devices.” Nor does Smethers disclose a WWW server as recited. Instead, as noted above, Smethers merely teaches techniques that enable wireless devices to implement bookmarks with improved transmission efficiency, reduced user navigation, and/or reduced amounts of memory resources.

For at least the above-stated reasons, the rejection of claim 7 must be withdrawn.

VI. CONCLUSION

For at least the reasons discussed above, it is respectfully submitted that claims 2-4, 6-8, 11, 14, and 15 are not obvious over the cited references. For the above reasons, Appellants respectfully requests this Honorable Board to reverse the rejection of the claims.

Respectfully submitted,

Pillsbury Winthrop LLP

By: 

Carlo M. Cotrone

Reg. No.: 48,715

Tel. No.: (703) 905-2041

Fax No.: (703) 905-2500

CHM/CMC
P.O. Box 10500
McLean, VA 22102

(703) 905-2000
Enclosure: Appendix